"Almost all" means, of course, except for a set of measure zero. This latter set contains, however, *all* rational numbers, *all* quadratic surds, the number e, and presumably much more. An unsolved problem with a delightfully ironic flavor is whether K itself is in the "almost all".

D. S.

1. D. H. Lehmer, "Note on an absolute constant of Khintchine," *Amer. Math. Monthly*, v. 46, 1939, pp. 148–152.
2. D. Shanks, MTE **164**, *MTAC*, v. 4, 1950, p. 28.
3. D. Shanks & J. W. Wrench, Jr., "Khintchine's constant," *Amer. Math. Monthly*, v. 66, 1959, pp. 276–279.
4. J. W. Wrench, Jr., "Further evaluation of Khintchine's constant," *Math. Comp.*, v. 14, 1960, pp. 370–371.

13[G, X].—T. L. Saaty, Editor, *Lectures on Modern Mathematics*, Volume II, John Wiley & Sons, Inc., New York, 1964, ix + 183 pp., 22 cm. Price $5.75.

14[F, X].—T. L. Saaty, Editor, *Lectures on Modern Mathematics*, Volume III, John Wiley & Sons, Inc., New York, 1965, ix + 321 pp., 22 cm. Price $11.75.

These two volumes complete the series containing the 18 lectures given under O. N. R.—George Washington University sponsorship. For detailed, general remarks concerning this series see the review of Volume I [1]. Volume II contains the six chapters:

"Partial Differential Equations with Applications in Geometry," by L. Nirenberg,
"Generators and Relations in Groups—The Burnside Problem," by Marshall Hall, Jr.,
"Some Aspects of the Topology of 3-Manifolds Related to the Poincaré Conjecture," by R. H. Bing,
"Partial Differential Equations: Problems and Uniformization in Cauchy's Problem," by Lars Gårding,
"Quasiconformal Mappings and Their Applications," by L. Ahlfors,
"Differential Topology," by J. Milnor,

and the last volume has

"Topics in Classical Analysis," by Einar Hille,
"Geometry," by H. S. M. Coxeter,
"Mathematical Logic," by Georg Kreisel,
"Some Recent Advances and Current Problems in Number Theory," by Paul Erdös,
"On Stochastic Processes," by Michel Loève,
"Random Integrals of Differential Equations," by J. Kampé de Fériet.

Detailed individual reviews are not needed or appropriate here. The chapters vary in length from the extensive, 101-page contribution of Kreisel which attempts "to make out a case that real, if modest, progress has been made on foundational problems" to the brief, 14-page lecture by Ahlfors. That latter is the only one that does not include a list of references, even though it is particularly missed there since its subject began in "a small paper" of H. Grötzsch which "was buried in a small journal." The lectures are all difficult and highly-specialized. (If there exists even a single mathematician in the entire world who can read all 18 chapters with ease and profit the first time around, the reviewer would wish that he would step forward, and so declare.) Perhaps the least difficult here for nonspecialists would be the (nonetheless very meaty) papers of Erdös, Coxeter, and Hille, since the concepts there are relatively simple.

Marshall Hall's subject, like those of Erdös and Coxeter, can utilize some combinatorial and other computer calculations. Hall implies that since Novikov's other shoe may never drop, the Burnside Problem (not Conjecture) must still be considered open for all $n > 6$. Bing's paper is enriched with many spooky diagrams. It contains a number of theorems that begin: "A fake cube is real if . . . ", and an outsider must be forgiven for doubting that the best possible terminology has been chosen. Milnor's subject has a similar occupational disease, e.g.—"How to Recognize an Honest Sphere," and makes more direct contact with Bing's paper through work of Smale, Stallings, and Zeeman pertinent to both topics.

Problem for the reader: Compare Milnor's diagram on p. 175, Vol. II with Coxeter's identical diagram on p. 64, Vol. III. Is their identity accidental, or of significance?

D. S.

1. T. L. Saaty, Editor, *Lectures on Modern Mathematics*, *Volume* I. Reviewed in *Math. Comp.*, v. 18, 1964, RMT **45**, pp. 329–331.

15[G].—Philip J. Davis, *The Mathematics of Matrices*, Blaisdell Publishing Company, New York, 1965, xiii + 348 pp., 24 cm. Price $7.50.

The most suitable adjective to use in describing this book is the word "appropriate."

Designed for high school seniors or college freshmen, its level is appropriate, there being a lot of motivation for each definition and result.

The style is appropriate. It is written in an informal manner, which can be expected to attract inquisitive young minds to learn about seemingly mystical arrays of numbers. There is a minimum of formalism and abstraction, and there are interesting diversions which hold one's attention.

The title is appropriate, for the material in the book is selected from wide areas of matrix mathematics, with the algebra of matrices being only one of the topics (and even here, with matrices as rectangular arrays being inviolate).

Finally, it is appropriate that one of our profession's best mathematics expositors should apply his energies so generously to the problem of providing really good books suitable for school mathematics. He deserves our thanks.

A list of the chapter titles here cannot possibly impart much about the book. It proceeds from notation and arithmetic; through some transformation theory and associated geometry; on to operators, characteristic values, and applications; and ends with "Pippins and Cheese," a tasty conglomeration of diverse problems, topics for further study, and historical notes. There is only one way to appreciate this book: read it.

This reviewer has no critical remarks to make.

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